

Real power lies in resilience, not risk

Alan Betts (<http://alanbetts.com>)

Our technology has brought us astonishing successes that we could not have imagined a few decades ago. But at the same time it often places our society at risk. In fact, technological change has come so fast that it has far outstripped our ability to grasp and handle risk. We know what to do if we can see a threat right in front of us — that is how we have survived as a species for thousands of years. But we would rather ignore threats we cannot clearly see or don't fully understand, to limit costs.

The bullet trains in Japan were programmed to stop at the first tremor; the system worked well, and no trains were derailed. The nuclear reactors also were programmed to start shutdown when they felt the earthquake. This worked, but reactors can't just be stopped like trains — they need active cooling for months. So when the tsunami destroyed all the power systems, a predictable disaster unfolded. The utility had decided what risks it was willing to pay for, so when a bigger event came along, it was labeled an "act of God." Hardly — it was an act of human foolishness to put six nuclear reactors on the coast, a short distance from a major fault line, with only limited protection against the tsunamis that have flooded the area in the past.

Nuclear power has always demanded that we don't properly price risk, because nuclear power and nuclear accidents have such far-reaching costs. Vermont Yankee is storing dangerous nuclear waste from decades of operation in a storage pond and in dry casks. This waste also contains enough plutonium-239 to make hundreds of nuclear weapons.

Vermont may now be faced with the storage of this nuclear material for centuries. What is the cost of this long-term nuclear guardianship role, which bears large risks? Did we build it into the price of the electricity that the plant has generated over the past 39 years? No — on paper the federal government accepted the nuclear waste storage risks, but it has not followed through with its commitments. With the United States deeply in debt, who will pay for all the deferred costs?

After Japan, we must again ask what risks Vermont Yankee was actually designed for. It was designed for small earthquakes, and it was built just above the flood plain of the Connecticut River. It has backup power from the close-by Vernon dam on the river, and from diesel generators. Of course, it is vulnerable to terrorist attack by aircraft — not a consideration when the plant was built forty years ago. And unfortunately the frequency of heavy rain, which has increased more than 60 percent since the reactor was designed, is predicted to go on increasing as the climate warms. If the "maximum probable flood" were now recalculated for this century, it would be larger. A more extreme flood might well be a threat to the plant and to the backup power supply provided by the Vernon dam.

Vermont Yankee's dry cask storage is on the river side, at a nominal height of 18 inches above the maximum probable flood. It was placed by the river to limit the radiation dose at the school across the street. It is clearly foolish to store radioactive waste on the edge of the flood plain, perhaps for centuries. But the risks involved were ignored — because there was nowhere else to put this dangerous waste.

The power of our technological achievements comes with large risks. We have to ask whether we want a society that has resilience, or a society that stumbles as the risks that we have ignored to cut costs bring us crisis after crisis. Resilience would bring us greater peace of mind and could spread justice in the world.

Vermont Adaptation planning <http://www.anr.state.vt.us/anr/climatechange/Adaptation.html>

Gambling with the Planet <http://www.project-syndicate.org/commentary/stiglitz137/>